

SEQUENCE LISTING

<110> Gure, Ali

Stockert, Elisabeth

Scanlan, Matthew

Jager, Dirk

Old, Lloyd

Chen, Yao-Tseng

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<150> US 09/489,101

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<211> 2291

<212> DNA

<213> Homo sapiens

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<211> 1580

<212> DNA

<213> Homo sapiens

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<211> 2509

<212> DNA

<213> Homo sapiens

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<213> Homo sapiens

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<220>
<221> Unsure
<222> (1176)..(1178)
<223> n = a, c, g or t

<220>

<221> Unsure
<222> (1180)..(1180)
<223> n = a, c, g or t

<220>
<221> Unsure
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<223> n = a, c, g or t

<220>
<221> Unsure
<222> (1184)..(1184)
<223> n = a, c, g or t

<220>
<221> Unsure
<222> (1186)..(1187)
<223> n = a, c, g or t

<220>
<221> Unsure
<222> (1189)..(1189)
<223> n = a, c, g or t

<220>

<221> Unsure
<222> (1208) .. (1208)
<223> n = a, c, g or t

<220>
<221> Unsure
<222> (1212) .. (1212)
<223> n = a, c, g or t

<220>
<221> Unsure
<222> (1215) .. (1216)
<223> n = a, c, g or t

<220>
<221> Unsure
<222> (1227) .. (1227)
<223> n = a, c, g or t

<220>
<221> Unsure
<222> (1232) .. (1232)
<223> n = a, c, g or t

<400> 17
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ctggagctgg ggctgangct ggggctgggg ctgnngctga nctggggctg aggctccngc 360
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gaatnnaaat ntccaccann tntgnaaant tangcnnttn ggacnaanaa anantcnnna 540
antctaannc cncnanaana tntaggana tgtttacaca agcaannatn tnancanatic 600
annccnatic nttaaannt gnattnaaaa naaananatga aangnccnctn ttnanccnctn 660
ttnntaanatn gnaacntna ctnactnnca nanatnttaa aantnggaaa caancacacn 720
nttnanacn nctnacttcg gagaataaan actcnnctn nnaatgnctc agacnaccn 780
ntcnttngng cacnnnaaaa tnanancctt cttnttttga taccnnaaa aaanaaaaac 840
cactttnaan aannttttta ttcnnaatnn cnannntnta canaggntnt tcacattctn 900
ancnnatttn tccanntnta ttntnccctn ttnnncnnat attnnncana ananantnnn 960
cnnnnnnacn nncnccnta nnaatattgc acaacnnaan aatannacnn nntntataa 1020
aatcanaan antancacna cncnannatc cctanaagtg nttaaaactc tatgtncnnc 1080
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<210> 18

<211> 387

<212> PRT

<213> Homo sapiens

<400> 18

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Met Tyr Ser Met Met Met Glu Thr Asp Leu His Ser Pro Gly Gly Ala
1           5           10           15
Gln Ala Pro Thr Asn Leu Ser Gly Pro Ala Gly Ala Gly Gly Gly Gly
20           25           30
Gly Gly Gly Gly Gly Gly Gly Gly Gly Gly Gly Ala Lys Ala Asn Gln
35           40           45

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Asp	Arg	Val	Lys	Arg	Pro	Met	Asn	Ala	Phe	Met	Val	Trp	Ser	Arg	Gly	50	55	60
Gln	Arg	Arg	Lys	Met	Ala	Gln	Glu	Asn	Pro	Lys	Met	His	Asn	Ser	Glu	65	70	75
Ile	Ser	Lys	Arg	Leu	Gly	Ala	Glu	Trp	Lys	Val	Met	Ser	Glu	Ala	Glu	85	90	95
Lys	Arg	Pro	Phe	Ile	Asp	Glu	Ala	Lys	Arg	Leu	Arg	Ala	Leu	His	Met	100	105	110
Lys	Glu	His	Pro	Asp	Tyr	Lys	Tyr	Arg	Pro	Arg	Arg	Lys	Thr	Lys	Thr	115	120	125
Leu	Leu	Lys	Lys	Asp	Lys	Tyr	Ser	Leu	Ala	Gly	Gly	Leu	Leu	Ala	Ala	130	135	140
Gly	Ala	Gly	Gly	Gly	Gly	Ala	Ala	Val	Ala	Met	Gly	Val	Gly	Val	Gly	145	150	155
Val	Gly	Ala	Ala	Pro	Val	Gly	Gln	Arg	Leu	Glu	Ser	Pro	Gly	Gly	Ala	165	170	175
Ala	Gly	Gly	Ala	Tyr	Ala	His	Val	Asn	Gly	Trp	Ala	Asn	Gly	Ala	Tyr	180	185	190
Pro	Gly	Ser	Val	Ala	Ala	Ala	Ala	Ala	Ala	Ala	Ala	Met	Met	Gln	Glu	195	200	205
Ala	Gln	Leu	Ala	Tyr	Gly	Gln	His	Pro	Gly	Ala	Gly	Gly	Ala	His	Pro	210	215	220
His	Arg	Thr	Pro	Ala	His	Pro	His	Pro	His	His	Pro	His	Ala	His	Pro	225	230	235
His	Asn	Pro	Gln	Pro	Met	His	Arg	Tyr	Asp	Met	Gly	Ala	Leu	Gln	Tyr	245	250	255
Ser	Pro	Ile	Ser	Asn	Ser	Gln	Gly	Tyr	Met	Ser	Ala	Ser	Pro	Ser	Gly	260	265	270
Tyr	Gly	Gly	Leu	Pro	Tyr	Gly	Ala	Ala	Ala	Ala	Ala	Ala	Ala	Ala	His	275	280	285
Gln	Asn	Ser	Ala	Val	Ala	Ala	Ala	Ala	Ala	Ala	Ala	Ala	Ala	Ser	Ser	290	295	300
Gly	Ala	Leu	Gly	Ala	Leu	Gly	Ser	Leu	Val	Lys	Ser	Glu	Pro	Ser	Gly	305	310	315
Ser	Pro	Pro	Ala	Pro	Ala	His	Ser	Arg	Ala	Pro	Cys	Pro	Gly	Asp	Leu	325	330	335
Arg	Glu	Met	Ile	Ser	Met	Tyr	Leu	Pro	Ala	Gly	Glu	Gly	Gly	Asp	Pro	340	345	350
Ala	Ala	Ala	Ala	Ala	Ala	Ala	Ala	Gln	Ser	Arg	Leu	His	Ser	Leu	Pro	355	360	365

Gln His Tyr Gln Gly Ala Gly Ala Gly Val Asn Gly Thr Val Pro Leu
 370 375 380

Thr His Ile
 385

<210> 19

<211> 317

<212> PRT

<213> Homo sapiens

<400> 19

Met Tyr Asn Met Met Glu Thr Glu Leu Lys Pro Pro Gly Pro Gln Gln
 1 5 10 15

Thr Ser Gly Gly Gly Gly Gly Asn Ser Thr Ala Ala Ala Ala Gly Gly
 20 25 30

Asn Gln Lys Asn Ser Pro Asp Arg Val Lys Arg Pro Met Asn Ala Phe
 35 40 45

Met Val Trp Ser Arg Gly Gln Arg Arg Lys Met Ala Gln Glu Asn Pro
 50 55 60

Lys Met His Asn Ser Glu Ile Ser Lys Arg Leu Gly Ala Glu Trp Lys
 65 70 75 80

Leu Leu Ser Glu Thr Glu Lys Arg Pro Phe Ile Asp Glu Ala Lys Arg
 85 90 95

Leu Arg Ala Leu His Met Lys Glu His Pro Asp Tyr Lys Tyr Arg Pro
 100 105 110

Arg Arg Lys Thr Lys Thr Leu Met Lys Lys Asp Lys Tyr Thr Leu Pro
 115 120 125

Gly Gly Leu Leu Ala Pro Gly Gly Asn Ser Met Ala Ser Gly Val Gly
 130 135 140

Val Gly Ala Gly Leu Gly Ala Gly Val Asn Gln Arg Met Asp Ser Tyr
 145 150 155 160

Ala His Met Asn Gly Trp Ser Asn Gly Ser Tyr Ser Met Met Gln Asp
 165 170 175

Gln Leu Gly Tyr Pro Gln His Pro Gly Leu Asn Ala His Gly Ala Ala
 180 185 190

Gln Met Gln Pro Met His Arg Tyr Asp Val Ser Ala Leu Gln Tyr Asn
 195 200 205

Ser Met Thr Ser Ser Gln Thr Tyr Met Asn Gly Ser Pro Thr Tyr Ser
 210 215 220

Met Ser Tyr Ser Gln Gln Gly Thr Pro Gly Met Ala Leu Gly Ser Met

225					230						235					240
Gly	Ser	Val	Val	Lys	Ser	Glu	Ala	Ser	Ser	Ser	Pro	Pro	Val	Val	Thr	
				245					250					255		
Ser	Ser	Ser	His	Ser	Arg	Ala	Pro	Cys	Gln	Ala	Gly	Asp	Leu	Arg	Asp	
			260					265					270			
Met	Ile	Ser	Met	Tyr	Leu	Pro	Gly	Ala	Glu	Val	Pro	Glu	Pro	Ala	Ala	
		275					280					285				
Pro	Ser	Arg	Leu	His	Met	Ser	Gln	His	Tyr	Gln	Ser	Gly	Pro	Val	Pro	
	290					295					300					
Gly	Thr	Ala	Ile	Asn	Gly	Thr	Leu	Pro	Leu	Ser	His	Met				
305					310					315						

<210> 20

<211> 443

<212> PRT

<213> Homo sapiens

<400> 20

Met	Arg	Pro	Val	Arg	Glu	Asn	Ser	Ser	Gly	Ala	Arg	Ser	Pro	Arg	Val	
1				5					10					15		
Pro	Ala	Asp	Leu	Ala	Arg	Ser	Ile	Leu	Ile	Ser	Leu	Pro	Phe	Pro	Pro	
			20					25					30			
Asp	Ser	Leu	Ala	His	Arg	Pro	Pro	Ser	Ser	Ala	Pro	Thr	Glu	Ser	Gln	
		35					40					45				
Gly	Leu	Phe	Thr	Val	Ala	Ala	Pro	Ala	Pro	Gly	Ala	Pro	Ser	Pro	Pro	
	50					55					60					
Ala	Thr	Leu	Ala	His	Leu	Leu	Pro	Ala	Pro	Ala	Met	Tyr	Ser	Leu	Leu	
65					70					75					80	
Glu	Thr	Glu	Leu	Lys	Asn	Pro	Val	Gly	Thr	Pro	Thr	Gln	Ala	Ala	Gly	
				85					90					95		
Thr	Gly	Gly	Pro	Ala	Ala	Pro	Gly	Gly	Ala	Gly	Lys	Ser	Ser	Ala	Asn	
			100					105						110		
Ala	Ala	Gly	Gly	Ala	Asn	Ser	Gly	Gly	Gly	Ser	Ser	Gly	Gly	Ala	Ser	
		115					120					125				
Gly	Gly	Gly	Gly	Gly	Thr	Asp	Gln	Asp	Arg	Val	Lys	Arg	Pro	Met	Asn	
		130				135					140					
Ala	Phe	Met	Val	Trp	Ser	Arg	Gly	Gln	Arg	Arg	Lys	Met	Ala	Leu	Glu	
145					150				155						160	
Asn	Pro	Lys	Met	His	Asn	Ser	Glu	Ile	Ser	Lys	Arg	Leu	Gly	Ala	Asp	
				165					170					175		

Trp Lys Leu Leu Thr Asp Ala Glu Lys Arg Pro Phe Ile Asp Glu Ala
 180 185 190
 Lys Arg Leu Arg Ala Val His Met Lys Glu Tyr Pro Asp Tyr Lys Tyr
 195 200 205
 Arg Pro Arg Arg Lys Thr Lys Thr Leu Leu Lys Lys Asp Lys Tyr Ser
 210 215 220
 Leu Pro Ser Gly Leu Leu Pro Pro Gly Ala Ala Ala Ala Ala Ala
 225 230 235 240
 Ala Ala Ala Ala Ala Ala Ala Ala Ser Ser Pro Val Gly Val Gly Gln
 245 250 255
 Arg Leu Asp Thr Tyr Thr His Val Asn Gly Trp Ala Asn Gly Ala Tyr
 260 265 270
 Ser Leu Val Gln Glu Gln Leu Gly Tyr Ala Gln Pro Pro Ser Met Ser
 275 280 285
 Ser Pro Pro Pro Pro Pro Ala Leu His Arg Tyr Asp Met Ala Gly Leu
 290 295 300
 Gln Tyr Ser Pro Met Met Pro Pro Gly Ala Gln Ser Tyr Met Asn Val
 305 310 315 320
 Ala Ala Ala Ala Ala Ala Ala Ser Gly Tyr Gly Gly Met Ala Pro Ser
 325 330 335
 Ala Thr Ala Ala Ala Ala Ala Tyr Gly Gln Gln Pro Ala Thr Ala
 340 345 350
 Ala Ala Ala Ala Ala Ala Ala Ala Ala Met Ser Leu Gly Pro Met Gly
 355 360 365
 Ser Val Val Lys Ser Glu Pro Ser Ser Pro Pro Pro Ala Ile Ala Ser
 370 375 380
 His Ser Gln Arg Ala Cys Leu Gly Asp Leu Arg Asp Met Ile Ser Met
 385 390 395 400
 Tyr Leu Pro Pro Gly Gly Asp Ala Ala Asp Ala Ala Ser Pro Leu Pro
 405 410 415
 Gly Gly Arg Leu His Gly Val His Gln His Tyr Gln Gly Ala Gly Thr
 420 425 430
 Ala Val Asn Gly Thr Val Pro Leu Thr His Ile
 435 440

<210> 21

<211> 276

<212> PRT

<213> Homo sapiens

<400> 21

Met Ser Lys Pro Val Asp His Val Lys Arg Pro Met Asn Ala Phe Met
1 5 10 15
Val Trp Ser Arg Ala Gln Arg Arg Lys Met Ala Gln Glu Asn Pro Lys
20 25 30
Met His Asn Ser Glu Ile Ser Lys Arg Leu Gly Ala Glu Trp Lys Leu
35 40 45
Leu Thr Glu Ser Glu Lys Arg Pro Phe Ile Asp Glu Ala Lys Arg Leu
50 55 60
Arg Ala Met His Met Lys Glu His Pro Asp Tyr Lys Tyr Arg Pro Arg
65 70 75 80
Arg Lys Pro Lys Thr Leu Leu Lys Lys Asp Lys Phe Ala Phe Pro Val
85 90 95
Pro Tyr Gly Leu Gly Gly Val Ala Asp Ala Glu His Pro Ala Leu Lys
100 105 110
Ala Gly Ala Gly Leu His Ala Gly Ala Gly Gly Gly Leu Val Pro Glu
115 120 125
Ser Leu Leu Ala Asn Pro Glu Lys Ala Ala Ala Ala Ala Ala Ala
130 135 140
Ala Ala Arg Val Phe Phe Pro Gln Ser Ala Ala Ala Ala Ala Ala
145 150 155 160
Ala Ala Ala Ala Ala Ala Gly Ser Pro Tyr Ser Leu Leu Asp Leu Gly
165 170 175
Ser Lys Met Ala Glu Ile Ser Ser Ser Ser Ser Gly Leu Pro Tyr Ala
180 185 190
Ser Ser Leu Gly Tyr Pro Thr Ala Gly Ala Gly Ala Phe His Gly Ala
195 200 205
Ala Ala Ala Ala Ala Ala Ala Ala Ala Ala Ala Ala Gly Gly His Thr His
210 215 220
Ser His Pro Ser Pro Gly Asn Pro Gly Tyr Met Ile Pro Cys Asn Cys
225 230 235 240
Ser Ala Trp Pro Ser Pro Gly Leu Gln Pro Pro Leu Ala Tyr Ile Leu
245 250 255
Leu Pro Gly Met Gly Lys Pro Gln Leu Asp Pro Tyr Pro Ala Ala Tyr
260 265 270
Ala Ala Ala Leu
275

<210> 22

<211> 533

<212> PRT

<213> Homo sapiens

<400> 22

Met	Leu	Leu	Asp	Ala	Gly	Pro	Gln	Phe	Pro	Ala	Ile	Gly	Val	Gly	Ser		
1				5					10					15			
Phe	Ala	Arg	His	His	His	His	Ser	Ala	Ala	Ala	Ala	Ala	Ala	Ala	Ala	Ala	
			20					25						30			
Ala	Glu	Met	Gln	Asp	Arg	Glu	Leu	Ser	Leu	Ala	Ala	Ala	Gln	Asn	Gly		
		35					40						45				
Phe	Val	Asp	Ser	Ala	Ala	Ala	His	Met	Gly	Ala	Phe	Lys	Leu	Asn	Pro		
	50						55					60					
Gly	Ala	His	Glu	Leu	Ser	Pro	Gly	Gln	Ser	Ser	Ala	Phe	Thr	Ser	Gln		
65					70					75					80		
Gly	Pro	Gly	Ala	Tyr	Pro	Gly	Ser	Ala	Ala	Ala	Ala	Ala	Ala	Ala	Ala	Ala	
				85					90						95		
Ala	Leu	Gly	Pro	His	Ala	Ala	His	Val	Gly	Ser	Tyr	Ser	Gly	Pro	Pro		
			100					105						110			
Phe	Asn	Ser	Thr	Arg	Asp	Phe	Leu	Phe	Arg	Ser	Ala	Arg	Leu	Pro	Gly		
		115					120					125					
Thr	Ser	Ala	Pro	Gly	Gly	Gly	Gln	His	Gly	Leu	Phe	Gly	Pro	Gly	Ala		
	130						135					140					
Gly	Gly	Leu	His	His	Ala	His	Ser	Asp	Ala	Gln	Gly	His	Leu	Leu	Phe		
145					150					155					160		
Pro	Gly	Leu	Pro	Glu	Gln	His	Gly	Pro	His	Gly	Ser	Gln	Asn	Val	Leu		
				165					170					175			
Asn	Gly	Gln	Met	Arg	Leu	Gly	Leu	Pro	Gly	Glu	Val	Phe	Gly	Arg	Ser		
			180					185					190				
Glu	Gln	Tyr	Arg	Gln	Val	Ala	Ser	Pro	Arg	Thr	Asp	Pro	Tyr	Ser	Ala		
		195					200					205					
Ala	Gln	Leu	His	Asn	Gln	Tyr	Gly	Pro	Met	Asn	Met	Asn	Met	Gly	Met		
	210					215					220						
Asn	Met	Ala	Ala	Ala	Ala	Ala	His	His	His	His	His	His	His	His	His		
225					230					235					240		
Pro	Gly	Ala	Phe	Phe	Arg	Tyr	Met	Arg	Gln	Gln	Cys	Ile	Lys	Gln	Glu		
			245						250					255			
Leu	Ile	Cys	Lys	Trp	Ile	Asp	Pro	Glu	Gln	Leu	Ser	Asn	Pro	Lys	Lys		
			260					265					270				

Ser Cys Asn Lys Thr Phe Ser Thr Met His Glu Leu Val Thr His Val
 275 280 285
 Ser Val Glu His Val Gly Gly Pro Glu Gln Ser Asn His Val Cys Phe
 290 295 300
 Trp Glu Glu Cys Pro Arg Glu Gly Lys Pro Phe Lys Ala Lys Tyr Lys
 305 310 315 320
 Leu Val Asn His Ile Arg Val His Thr Gly Glu Lys Pro Phe Pro Cys
 325 330 335
 Pro Phe Pro Gly Cys Gly Lys Val Phe Ala Arg Ser Glu Asn Leu Lys
 340 345 350
 Ile His Lys Arg Thr His Thr Gly Glu Lys Pro Phe Gln Cys Glu Phe
 355 360 365
 Glu Gly Cys Asp Arg Arg Phe Ala Asn Ser Ser Asp Arg Lys Lys His
 370 375 380
 Met His Val His Thr Ser Asp Lys Pro Tyr Leu Cys Lys Met Cys Asp
 385 390 395 400
 Lys Ser Tyr Thr His Pro Ser Ser Leu Arg Lys His Met Lys Val His
 405 410 415
 Glu Ser Ser Pro Gln Gly Ser Glu Ser Ser Pro Ala Ala Ser Ser Gly
 420 425 430
 Tyr Glu Ser Ser Thr Pro Pro Gly Leu Val Ser Pro Ser Ala Glu Pro
 435 440 445
 Gln Ser Ser Ser Asn Leu Ser Pro Ala Ala Ala Ala Ala Ala Ala
 450 455 460
 Ala Ala Ala Ala Ala Ala Ala Val Ser Ala Val His Arg Gly Gly Gly
 465 470 475 480
 Ser Gly Ser Gly Gly Ala Gly Gly Gly Ser Gly Gly Gly Ser Gly Ser
 485 490 495
 Gly Gly Gly Gly Gly Gly Ala Gly Gly Gly Gly Gly Gly Ser Ser Gly
 500 505 510
 Gly Gly Ser Gly Thr Ala Gly Gly His Ser Gly Leu Ser Ser Asn Phe
 515 520 525
 Asn Glu Trp Tyr Val
 530